



Sidewinder Platinum v 1.0



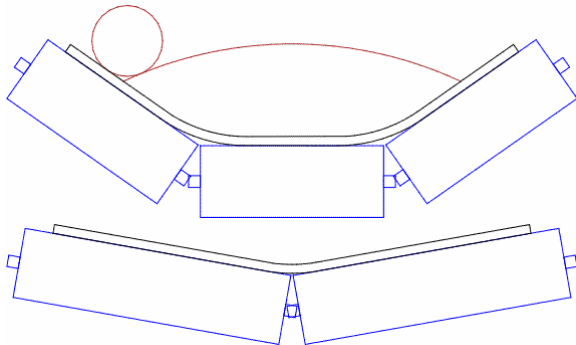
Project	Conveyor Project	
Conveyor	CV-Example	
Location	Conveyor Location	
Client	Company ABC	

Company	Company ABC	Description: 900 m Overland Conveyor
Designer	AC-Tek	
Date	7/22/2005	Comments: 3200 T/H running at 4 m/s
Filename	cv206_2drv.swi	

Material Input Data

Type.....Iron Ore, crushed
 Tonnage..... 3200 TPH
 Density..... 2200 kg/m³
 Maximum lump size..... 150 mm
 Surcharge angle..... 25 deg
 Percent lumps..... 10%

Material Loading Profile



%CEMA area..... 73 %
 %Total area..... 52 %
 Edge distance..... 136 mm
 Bed depth..... 196 mm

Belting Input Data

Type.....Steel Cord
 Width..... 1050 mm
 Speed..... 4.00 m/s
 Rating..... 1200 N/mm
 Top cover thickness..... 8 mm
 Bottom cover thickness..... 5 mm
 Total thickness..... 19 mm
 Mass..... 26.9 kg/m
 Elastic modulus..... 86,400 kN/m
 Tape Length..... 1,929 m

Idler Set Input Data

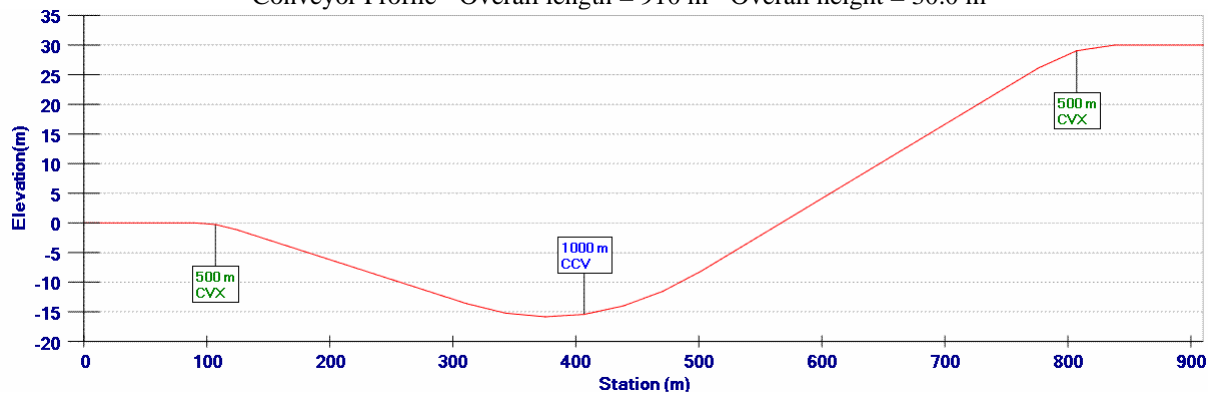
	Carry	Return
Type	Equal Roll	VEE
Roll diameter (mm)	152	152
Trough Angle (deg)	35	10
Number of rolls	3	2
Series name	6305	6205
Total drag (N)	8.3	5.5
Roll length (mm)	389	588
Shaft diameter (mm)	25	25
Rotating mass (kg)	20.6	19.6
Idler spacing (m)	1.00	2.00
in convex curves	1.00	2.00
in concave curves	1.00	2.00
Number of Idler Sets	913	0
Roll RPM	505	0
Min life (1000 Hr)	268	
95% life ¹ (1000 Hr)	320	

¹ L₁₀ life above which 95% of idlers exceed

Take-up Input Data

Type.....Gravity
 Location.....Tail
 Tension..... 60 kN
 Req'd steady state tension..... 41 kN
 Req'd momentary tension..... 41 kN
 Req'd tension for sag..... 65 kN
 Max pulley force..... 120 kN
 Running disp..... -0.01 to 0.47 m
 Momentary disp..... -0.35 to 0.59 m
Take-up Displacement Summary (m)
 Total displacement(incl thermal)..... 0.94 m
 Permanente elongation..... 0.96 m
 Splice length (2 included)..... 2.10 m
 Clearance..... 1.00 m
 Required displacement..... 5.00 m

Conveyor Profile - Overall length = 910 m - Overall height = 30.0 m





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Maximum Belt Tensions

	Tension (kN)	Safety Factor
Steady State	191	6.59
Momentary	224	5.61

Minimum Belt Tensions

	Tension (kN)	Sag (%)
Steady State	44	0.68
Momentary	10	2.94

Starting and Stopping

Start controlFixed time
 Start time.....60.0 sec
 O-Stop controlFixed time
 O-Stop time.....30.0 sec
 E-Stop control.....Drift
 E-Stop time7.8 to 80.5 sec
 E-Stop distance15.6 to 160.9 m

Motor Input Data

Type.....VFD
 Total number of motors2
 Nameplate rating.....350 kW
 Total installed power700 kW
 Synchronous speed1500 RPM
 Reducer ratio.....19.53
 Drive inertia.....6 kg-m²
 Flywheel inertia15 kg-m²
 Total inertia.....20 kg-m²
 Maximum starting torque.....135%
 Efficiency.....93 to 98%
 Pulley lagging typerubber
 Backstop Required.....Yes

Demand Power (kW)

Case	Demand Power (kW)	% Nameplate
Empty - Normal	74	11
Fully Loaded - Normal	516	74
Fully Loaded - Low	467	67
Fully Loaded - High	555	79
All Inclines + Flat Sections - High	644	92
Declines Only - Low	-41	-6

Din Factor and Equivalent Mass

Case	Din Factor	Belt Line Mass (kg)
Empty - Normal	0.0119	148,624
Fully Loaded - Normal	0.0164	351,536
Fully Loaded - Low	0.0146	339,385
Fully Loaded - High	0.0182	353,966
All Inclines + Flat Sections - High	0.0174	290,591
Declines Only - Low	0.0125	199,849



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Pulleys at Tail



Pulleys at Head



Pulley	Location (Element)	Type	Wrap (deg)	Maximum Resultant Tension (kN)		Maximum Belt Line Tension (kN)	
				Running	Momentary	Running	Momentary
Drive 1	Head (17)	1	174	317	366	191	224
Drive 2	Head (19)	1	186	188	226	126	141
Pulley 3	Head (21)	1	-180	126	169	63	85
Pulley 4	Head (23)	3	-45	48	65	63	84
Pulley 5	Head (25)	3	47	50	67	63	84
Pulley 6	Head (27)	3	-2	2	3	63	84
Pulley 7	Tail (43)	3	-49	50	51	60	61
Pulley 8	Tail (45)	3	51	52	53	60	61
Pulley 9	Tail (47)	3	-29	30	30	60	61
Pulley 10	Tail (49)	3	27	28	28	60	60
Take-up	Tail (51)	2	180	120	120	60	60
Pulley 12	Tail (53)	2	-180	121	121	61	61
Pulley 13	Tail (55)	2	180	121	122	61	61

Type	Diameter (mm)	Lagging type	Lagging thickness	Diameter with lagging (mm)	Face width (mm)
1	1000		0	1000	
2	800		0	800	
3	600		0	600	



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Turnover Summary

Head Turnover							
<i>Location: Station 884 m (at element 26)</i>							
<i>Type: Simple helix with support rolls at quarter points</i>							
<i>Length: 40 m</i>							
	Min Tension (kN)	Min Stress (N/mm)	Max Sag (mm)	Max Sag %	Max Tension (kN)	Max Stress (N/mm)	Cable Safety Factor
Running	62	16	125	0.3	62	182	6.61
Momentary	44	-6	140	0.4	84	193	6.22

Tail Turnover							
<i>Location: Station 60 m (at element 46)</i>							
<i>Type: Simple helix with support rolls at quarter points</i>							
<i>Length: 40 m</i>							
	Min Tension (kN)	Min Stress (N/mm)	Max Sag (mm)	Max Sag %	Max Tension (kN)	Max Stress (N/mm)	Cable Safety Factor
Running	59	13	127	0.3	59	180	6.65
Momentary	40	-12	145	0.4	60	181	6.64

Vertical Curve Summary

<i>Summary of Vertical Curve on Carry Strand</i>							
Elements	Station	Type	Radius	Running Tensions		Momentary Tensions	
				Reqd Radius	Reason	Reqd Radius	Reason
3-5	90 - 124	convex	500	91	Min stress	102	Min stress
6-12	311 - 502	concave	-1000	-424	Liftoff	-517	Min stress
13-15	776 - 838	convex	500	410	Max stress	485	Max stress

<i>Summary of Vertical Curve on Return Strand</i>							
Elements	Station	Type	Radius	Running Tensions		Momentary Tensions	
				Reqd Radius	Reason	Reqd Radius	Reason
39-41	90 - 124	convex	500	0		0	
32-38	311 - 502	concave	-1000	-345	Liftoff	-385	Liftoff
30-31	776 - 807	convex	500	0		0	



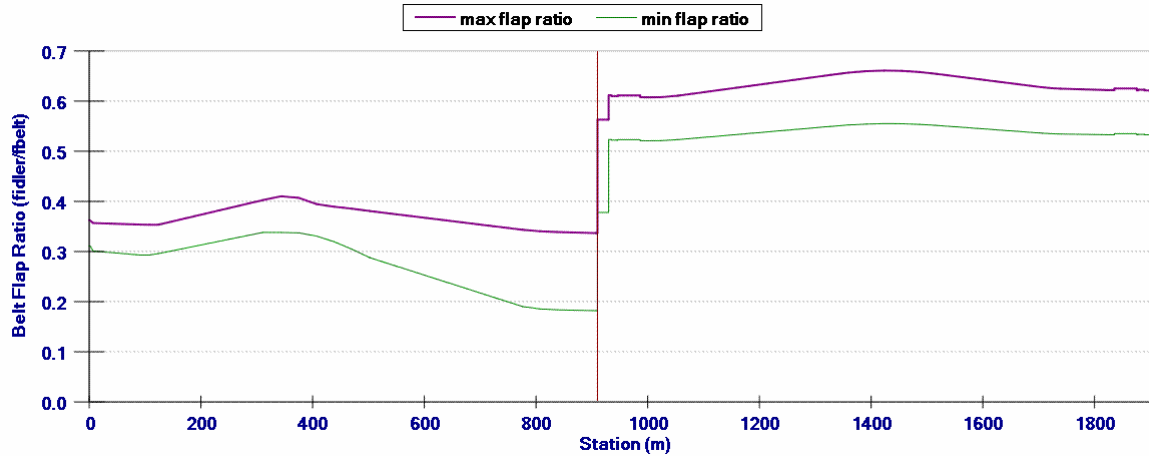
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Belt Flap Summary Plot



* Belt flap resonance occurs at flap modes 1, 2, 3, and 4

Belt Tension Summary Plot

